

Application Ser. No. 10/613,956

Title: COMPOSITION FOR COMBATING/REPELLING INSECTS, BIRDS, DIRTS AND PARASITES

Response to Office Action dated: September 12, 2006

REMARKS

Claims 38 and 145-155 and 157 to 164 remain in this application. Please note that two claims numbered "151" were present in the previous amendment and this duplication has been corrected by renumbering the second such claim as claim 164. Claims 156 has been cancelled, and claims 38, 152-155, 157 to 159, 162 and 163, and newly renumbered claim 164 have been amended.

Applicants have elected a specific species among those proposed by the examiner in the restriction requirement previously imposed. Applicant's election of species was without traverse, and is exemplified by the examples of the specification set forth in examples 16 and 18 to 20. Applicants do not concede any assumption of equivalence by this election.

The Examiner has rejected claims 38 and 149-163 under 35 U.S.C. § 112, second paragraph, asserting that these claims are indefinite. The Applicants are confused by this rejection. The Examiner has stated that "silicon is not silicone." (See the penultimate paragraph on page 2.) The Applicants cannot locate silicone anywhere in the rejected claims. In fact, an electronic word search of the amendment filed on June 19, 2006, does not locate the word silicone in the amendment.

As to the remaining portion of this rejection, the Applicants have amended claim 38 (and the dependent claims, as necessary) to make it clear that the silicon containing particles comprise a hydrophobic coating. Furthermore, the specific types of silicon containing particles are set forth in claim 38. Applicants thus respectfully submit that in view of the amendment, the rejection under 35 U.S.C. §112, second paragraph, should be withdrawn.

Submitted herewith is a Declaration under Rule 1.132 by one of the co-inventors, Gino Sirejacob. In that Declaration, Mr. Sirejacob indicates both his knowledge of the Office Action and the amended claim 38 hereof. Mr. Sirejacob's Declaration further describes testing of several hydrophobic silicon dioxide particles in connection with the extermination of parasites. Paragraphs 5 and 6 of the Declaration point out the relatively low results of the tests

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using the dry powders. In contrast, paragraphs 7 through 10 describe the preparation of aqueous compositions, and the remarkably more favorable results using these compositions. As noted by Mr. Sirejacob in paragraph 11 of his Declaration, the excellent results obtained for combating parasites, and in particular lice, were not able to be predicted, and are believed to result from the selection of a mix of at least two of the gums from the group consisting of xanthan gum, guar gum and scleroglucan.

Mr. Sirejacob specifically addresses the Ward '681 and Ochmogo et al '909 patents in his Declaration. In this regard, he indicates that it is unexpected from their teachings (and thus not obvious to one skilled in the art) that the use of such a specific mix of gums could improve the efficiency of hydrophobic silicon containing particles in combating the parasites. This is specifically addressed in the comparison of the low results obtained using hydrophobic SiO₂ particles in dry form (3 hours to death of the lice) with the results obtained using the composition of the present invention (10 minutes to death of the lice).

The amendment to claim 38 now revises the previous language reading "at least 7% by weight of hydrophobic silicon containing particles" to instead call for "at least 7% by weight of silicon (Si) containing particles, said particles:

(a) comprising:

a hydrophobic coating;

a SiO₂ content of at least 80% by weight;

an average primary particle size comprised between 5 and 40nm; and

a BET surface of at least 125m²/g; and

(b) being selected from the group consisting of kaolinite, montmorillonite, attapulgite, hectorite, smectite, illite, bentonite, halloysite, vermiculite, sepiolite, beidellite, palygorskite, talc, SiO₂, and mixtures thereof; and

- at least two gums selected from the group consisting of guar gum, xanthan gum and scleroglucan.

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Support for this amendment is found in claim 156, now cancelled, as well as examples 16 and 18 to 20. With regard to the amendments to claim 163, the modified structure is achieved by breaking agglomerated nanoparticles, for example by milling. The support for this amendment may be found at page 7, lines 4 to 12 of the specification as filed.

At page 3 of the September 12 Office Action, the examiner makes relies on a hypothetical combination of the U.S. Patents to Ward et al (US6,093,681) and to Ochomogo et al (US6358909) as rendering obvious to one skilled in the art the claimed subject matter of claims 38, 149, 151 to 159, 162 and 163. As now amended, Applicants respectfully submit that there is no teaching or suggestion in the prior art as to the composition as now claimed which would lead one skilled in the art to find the claimed invention obvious.

Ward et al relates to a method for applying an exogenous chemical to a plant, said method comprising the steps of :

(a) contacting the foliage of the plant with the exogeneous chemical, and

(b) contacting the same foliage with an aqueous composition that comprises a first excipient substance that is amphiphilic and a second excipient substance selected so that said the aqueous composition only forms anisotropic aggregates in or on a wax layer when both excipient substances are present,

wherein the weight ratio first excipient / exogeneous chemical is between 1:3 and 1:100.

In Ward '681, the first excipient is a vesicle forming amphiphilic substance, such as a vesicle forming lipid. Such first excipients comprise three preferred classes, namely the amphiphilic liposome-forming substances (as preferred example lecithin), cationic surfactants and alkylether surfactants.

The second excipient substance has at least a hydrophobic moiety.

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As stated in column 26, lines 55 to 67 of the Ward '681 patent, it is often beneficial to add ingredients to provide acceptable storage stability in the glyphosate formulation, for achieving higher concentrations. For example, this would include colloidal particulate silica or aluminum oxide at 0.5 - 2.5% by weight.

Another possible excipient is povidone.

However, Ward et al does not teach, nor suggest that specific SiO₂ particles are suitable for combating parasites, insects, molluscs, mites and ticks.

Ward et al does not teach, nor suggest the combined use of two gums selected from guar gum, xanthan gum and scleroglucan gum, nor the advantage to use such a combination with hydrophobic coated silicon containing particles for achieving a better efficiency.

The other cited reference, Ochomogo et al. '909, relates to an oil-in-water suspoemulsion system for the delivery of actives for laundering or cleaning, etc. The active ingredient in Ochomogo et al is a water insoluble material, such as an abrasive material (Examples of abrasive are finely divided silica), antimicrobial actives (quaternary ammonium compounds, phenols, etc. as examples), fragrances, hypochlorite, fabric softener, fluorescent whitening agent, shining, restorative or anti-filming agents, such as polymers. Examples of polymers are fluoropolymers, polysaccharides, such as gums (xanthan gum, guar gum, locust bean gum, tragacanth gum and derivatives thereof, gelatin, sodium caseinate), polycarboxylates, polystyrenesulfonates, etc..

In Ochomogo et al. '909, the oil phase comprises an oil which is a lipophilic constituent and nonionic surfactant mixtures comprising a non ionic surfactant with a HLB of less than 7 and a non ionic surfactant with a HLB of more than 10, preferably with a third non ionic surfactant with a HLB of about 8 to 9. The oil can be thickened for the ease of the blending. Such thickeners for the oil are for example aerosil (finely divided silica), xanthan gum, guar gum, and other gums.

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Again, Ochomogo et al. '909 does not teach, nor does it suggest, that specific SiO₂ particles are suitable for combating parasites, insects, molluscs, mites and ticks. Furthermore, Ochomogo et al. does not teach, nor suggest the combined use of two gums selected from guar gum, xanthan gum and scleroglucan gum, nor the advantage to use such a combination with hydrophobic coated silicon containing particles for achieving a better efficiency for combating parasites.

Here, the Applicants have conducted specific testing showing the unexpected results obtained by the claimed composition. Tests disclosed in the present application have shown that by using guar gum + xanthan gum and guar gum + scleroglucan gum, it was possible to achieve optimum efficiency of the treatment to exterminate the parasites. In this regard, Applicant's specifically invite the examiner to refer to examples 16 and 18 to 20 of the application as filed.

Further evidence of the non-obviousness of the invention is provided by reference to the Declaration of Mr. Sirejacob as discussed above. Clearly, the dramatically different and more favorable results obtained using the present composition as opposed to the use of a dry hydrophobic coated silicon dioxide particles demonstrates that the present invention would not be obvious to one of ordinary skill in the art by reference to the Ward '681 and Ochomogo et al. '909 patents, or a hypothetical combination thereof.

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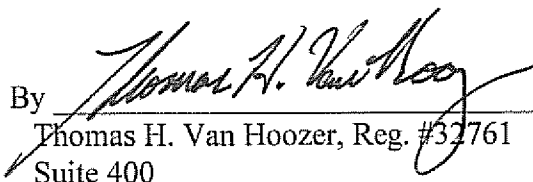
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Accordingly, applicants respectfully request passage of the present application to allowance. Any additional fees necessitated by this submission may be charged to Deposit Account 19-0522. Any issues which remain and which may be resolved by a telephone conference may be addressed to the undersigned at 1-800-445-3460.

Respectfully submitted,

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